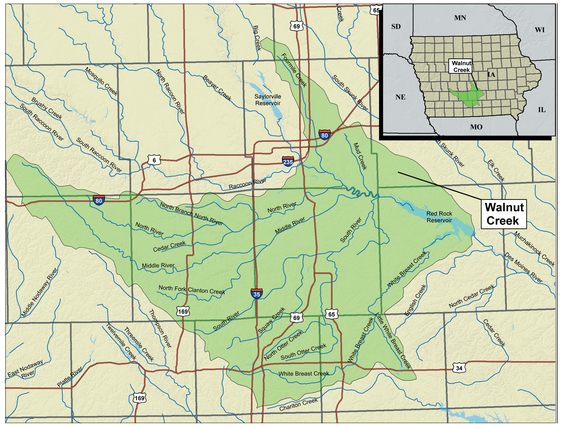
United States Department of Agriculture

Conservation Effects Assessment Project (CEAP)

Walnut Creek Watershed, Iowa: 2004-2007

A CSREES* Competitive Grant Watershed, one of 24 CEAP watershed projects.



CEAP Assessment

Determine which combinations of conservation practices, and respective placements within the watershed, will achieve local water quality goals for sediment and nutrient loads.

Watershed Description

- 12,860 acres
- More than 80% cropland
- Nearly 3,000 cropland acres recently converted to native prairie at the Neal Smith National Wildlife Refuge.
- Participant in the Clean Water Act Section 319 Nonpoint Source Pollution Program.

Issues: Walnut and Squaw Creeks are affected by many agricultural nonpoint source pollutants, including sediment, nutrients, pesticides and bacteria. Streambank erosion contributes to significant sedimentation in the creeks.

*Cooperative State Research, Education, and Extension Service

Approach

Water sampling: Nitrogen, phosphorus, pesticides, sediment, fecal coliform, pH, oxygen, turbidity, conductivity, and temperature

Watershed models: SWAT (Soil and Water Assessment Tool), GFLOW (Groundwater Flow model), and a grid-based sediment delivery model based on the Modified Universal Soil Loss equation.

Water monitoring: EPA Nonpoint Source National Monitoring Project

Assess practices: Grass plantings, conservation tillage, terraces, grassed waterways, strip cropping, and contouring; also nutrient management and other production practices.

Communicating Results

Share results with watershed and commodity groups, environmental groups, state government, and other interested parties through a variety of activities.

Collaborators

- USDA, ARS National Soil Tilth Laboratory
- Iowa Department of Natural Resources
- Iowa Department of Agriculture and Land Stewardship

Contacts

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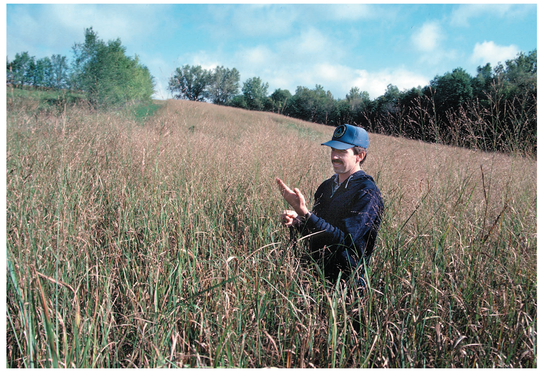
NRCS State Conservationist
Rick Van Klaveren

This farmer uses waterways and filter strips as part of his conservation system.



Native grasses planted on highly erodible land offer wildlife habitat, improved water quality, and protection against soil erosion.

In a small watershed near Treynor, Iowa, hydrologist Mike Burkart (left) and farmer Bill Vorthman draw water from a 30-foot-deep sampling well to test for herbicides and nitrate.

Timeline

2003
Initial funding

2004
August CEAP bibliographies

2005
May Wetlands peer review
July Wildlife literature review (program-based)
October Cropland literature reviews
Wildlife literature review (practice-based)
Wildlife Work Plan
November Wetlands Work Plan
December Draft findings—
Prairie Pothole region

2006
February Preliminary habitat quality models—
Prairie Potholes wetland region
March Preliminary National Assessment Report

2007
Fall National Assessment Final Report

2008
January CSREES Watershed final reports

www.nrcs.usda.gov/technical/nri/ceap/